Early Journal Content on JSTOR, Free to Anyone in the World

This article is one of nearly 500,000 scholarly works digitized and made freely available to everyone in the world by JSTOR.

Known as the Early Journal Content, this set of works include research articles, news, letters, and other writings published in more than 200 of the oldest leading academic journals. The works date from the mid-seventeenth to the early twentieth centuries.

We encourage people to read and share the Early Journal Content openly and to tell others that this resource exists. People may post this content online or redistribute in any way for non-commercial purposes.

Read more about Early Journal Content at http://about.jstor.org/participate-jstor/individuals/early-journal-content.

JSTOR is a digital library of academic journals, books, and primary source objects. JSTOR helps people discover, use, and build upon a wide range of content through a powerful research and teaching platform, and preserves this content for future generations. JSTOR is part of ITHAKA, a not-for-profit organization that also includes Ithaka S+R and Portico. For more information about JSTOR, please contact support@jstor.org.

Contrast the foregoing with the following written from Kew, April, 1887, to De Candolle.

"You will be a little surprised at the sudden transfer of Mrs. Gray and myself to England, but I wanted a vacation and one more bit of pleasant travel with Mrs. Gray while we are both alive and capable of enjoying it. Whether I shall look in upon you at Geneva is doubtful, but it may be even for a moment. We never expect to have repeated the pleasant work at Geneva of the spring of 1881. We expect to go to Paris in May, but subsequent movements are uncertain. Always dear De Candolle, affectionately yours."

These volumes will always be interesting to American botanists, especially to those who enjoyed Dr. Gray's personal acquaintance.

CHARLES E. BESSEY.

A Theory of Development and Heredity.[4]—This volume recently issued by the Macmillans with the above title will no doubt find a good many readers. It is a book that deserves perusal, in that it presents with clearness the main issues that are how agitating bioloogists, though the bias of the author is decidedly Lamarckian. In fact, it is probably the strongest popular contribution to the Lamarckian side of the controversy that has yet appeared. The author states that in the first place the work is an effort to extend the application of the law of the conservation of energy to the phenomena of living matter, and to resolve the premises given by the science of physics to their conclusion in the realm of biology. How far he has succeeded may be open to question, but his array of facts in support of his views is certainly very creditable. Many of these facts have been known for a good while to biologists, but the author of the volume has brought them into their proper collocation in respect to each other and has made out a very strong argument in support of his position. In the second place, to use his own words, "it is the extension to all living matter of certain fundamental properties of life which psychology has either proved or tacitly assumed to exist in the higher animals." He here refers to the effects of repetition and association operating through a coördinating nervous mechanism or system. His view of organic evolution, is that it is a mechanico-psychological process. In this respect his views are closely similar to those of Cope published long since in a collected form—Cope's view is that consciousness is to be regarded as an important factor in evolution, just how it operates is not so definitely stated as by Orr, who finds in the nervous system the coördinating mechanism through which consciousness manifests itself, but under the domination of the laws of the conservation of energy.

---

[4] A Theory of Development and Heredity, by Henry B. Orr, Ph. D. Macmillan & Co., London & New York, 1893, crown 80, pp. ix and 255.

The author does not claim to have made any new discovery, but only to have brought known facts into new relations. There is however, a lamentable defect palpable throughout the book in respect to the citation of authorities. In some cases, in which our author is not alone, he entirely forgets to cite those who have published similar views long before the appearance of his work. The suggestion that all biological phenomena must be interpreted in terms of the theory of the conservation of energy was a thesis defended in several papers published by the present reviewer during the last five years. In his argument in support of the first view that energy must be considered first of all, the author also fails to appreciate the great complexity of the mechanism represented by the cell, nor does he seem to have made himself familiar with the very important and pregnant results of Quincke, Bütschli, Berthold, Dreyer and others. In another place a discovery is mentioned that is undoubtedly to be the first of all accredited to Prof. Alpheus Hyatt, instead of to Wurtenberg, namely, that evolutionary changes in the Ammonites first show themselves on the outer or last whorl of the shells of these organisms. No credit is allowed Prof. Eimer on p. 63, where in a few sentences some of the most important results of that ingenious writer are epitomized in regard to growth itself as a factor in organic evolution. In the chapter on the origin of variations, there is some very crude speculation, that will hardly bear critical examination, and in one place the author shows that he is altogether unfamiliar with Fick's very important and interesting experiments bearing on the origin of joints and the forms of articular surfaces. *Actinosphœrium* is misspelled "*Actinosphœra,*" and a *cellular* structure is ascribed to this protozoan, and the author also falls into a teleological trap when he asserts that the vesicles and their walls "cellular spaces" in this organism are for the purpose of giving it permanence of figure and support. On page 49, it is stated that "pigment is caused by light acting upon the tissues and where there is no light there can be no pigment." To this it might be replied, how about the black pigment of the *substantia nigra* of the human brain ; that is certainly shut out from the light in the centre of the head? With certain reservations it is however, certainly true that pigmentation is associated with the influence of light as the experiments of Cunningham and Schiedt on widely diverse forms have proved. The direct and interesting correlation between coloration and latitude, first noticed by the late Prof. Baird to hold of closely allied species or of individuals of the same species from different latitudes is not mentioned by the author. The principle of acceleration and retardation, first strongly put forward as early as 1869 by Prof. Cope is also not mentioned, though partly involved in Weismann's quoted statement of the laws governing the ontogenetic appearance of characters given on p. 141.

This failure to render credit where a citation by title would have answered the purpose, is all the more evident by reason of the way in which American naturalists generally have been ignored, as is shown by the details given above, but to which much might be added. The introductory chapters are very suggestive, however, and bring in certain physical evidence in a new way. Especially suggestive is the theory of after-effects here foreshadowed, and which is especially well supported by facts cited from Detmer in Chapter IV. The fallacious arguments of the ultra-selectionists in regard to the origin of blind cave forms, are ingeniously answered in Chapter XII. The results of Stahl and Frank in changing the structure of plants by charging their environmental relations are epitomized, as well as Born's and Yung's experiments in determining the sex and growth of tadpoles by means of the food are briefly detailed and used as evidence. No reference is made to the experiments of Mrs. Treat or of Mr. Gentry in this connection.

To sum up the book is well worth careful perusal, and is to be commended to students of the present activity amongst naturalists in regard to the problems of heredity. Dr. Orr's book, on the whole, presents the Lamarckian side of the argument with unusual fairness and completeness. The book would be greatly improved by the addition of a full index which it is to be hoped may be supplied in a future edition. This book is also an indication of the tendencies of the times, namely, of an effort to trace all phenomena including those of life to their physical sources. That such end will some day be achieved there can scarcely be any doubt, since experimental endeavor is now busy with the work of imitating the phenomena of life by artificial and experimental means, such for example, as the production of artificial amœbæ.—R.

The Wilder Quarter-Century Book.[5]—This volume is a col-

---

[5] The Wilder Quarter-Century Book. A Collection of Original Papers dedicated to Prof. Burt G. Wilder at the close of his twenty-fifth year of service in Cornell University (1868-1893). By some of his former students, Ithaca, N. Y., 1893.